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prior art did not anticipate the Applicant's invention or render the Applicant's invention obvious. The Examiner agreed with the Applicant's reasoning. The Examiner noted that if these issues were presented in a Response, the Examiner would withdraw the Final Office Action.

In view of the following discussion presented in this Response, the Applicant respectfully submits that none of the claims now pending in the application are anticipated under the provisions of 35 U.S.C. § 102 or obvious under the provisions of 35 U.S.C. § 103. Thus, the Applicant believes that all of these claims are now in allowable form.

#### Rejections

##### A. 35 U.S.C. § 102(b)

The Examiner rejected claims 1-5 and 10-11 under 35 U.S.C. § 102(b) as being anticipated by Watanabe et al., U.S. Patent 5,309,001. The rejection is respectfully traversed.

#### Claim 1

The Examiner alleges that Watanabe et al. discloses a network Fig. 12a for distributing a power signal in an optoelectronic circuit 350 comprising a plurality of electrically conductive pathways forming at least one level, wherein the portions of the conductive pathways are interconnected; a plurality of segments 353a-353b forming each level, wherein each segment of the level is equal in length; means for coupling 347/352 the power signal from a primary input to a point at the center of a first level; terminal nodes 359a-b coupled at the extremities of a last level for supplying the power signal to devices that form at least a portion of the optoelectronic circuit 350; and wherein the number of segments connecting the primary input to each of the terminal nodes is equal. The Applicant respectfully disagrees.

"Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the

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claim" (Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1983)) (emphasis added).

As presented to the Examiner in the telephone conversation of January 23, 2003, the Applicant submits that Watanabe does not teach the invention of the Applicant. The Applicant's claim 1 positively recites:

"A network for distributing a power signal in an optoelectronic circuit, said network comprising:  
a plurality of electrically conductive pathways forming at least one level, wherein portions of said conductive pathways are interconnected;  
a plurality of segments forming each level, wherein each segment of a level is equal in length;  
means for coupling said power signal from a primary input to a point at the center of a first level;  
terminal nodes coupled at the extremities of a last level for supplying said power signal to a **plurality of devices** that form at least a portion of said optoelectronic circuit; and  
wherein the number of segments connecting said primary input to each of said terminal nodes is equal." (emphasis added).

The Applicant's invention is directed at least in part to network for distributing a power signal to a **plurality of devices** connected to terminal nodes at the extremities of a last level of the power distribution network as is clearly claimed in the Applicant's claim 1. That is, a single power distribution network provides a single power signal to a plurality of devices such as VCSELs to ensure a uniform bias. Within the context of the present invention, the Applicant discloses:

"The present invention is an arrangement for distributing power to optoelectronic devices on an optoelectronic circuit, for example, an array of VCSELs integrated into a VLSI chip, using a novel power distribution tree network. The tree utilizes equal lengths of conductive pathways to each optoelectronic device to distribute power. The tree network eliminates small differences in bias voltage to the optoelectronic devices in different locations of the optoelectronic circuit resulting from resistive voltage drops along a conventional linear power supply line." (See Specification, page 4, line 28 through page 5, line 5).

"Although voltage drops are not typically an issue for digital circuits or for low-current analog circuits, they can have a dramatic effect on the

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output power of optoelectronics devices and, in particular, VCSELs." (See Applicant's Specification, page 5, lines 20-23).

It is evident from the Applicant's claim 1 and the disclosure, that the Applicant's invention is directed at least in part to "terminal nodes coupled at the extremities of a last level for supplying said power signal to a **plurality of devices** that form at least a portion of said optoelectronic circuit." In addition, the Applicant's specification discloses providing uniform power at the terminal nodes for providing said uniform power to a plurality of devices.

There is absolutely no teaching or suggestion in Watanabe et al. for "terminal nodes coupled at the extremities of a last level for supplying said power signal to a **plurality devices** that form at least a portion of said optoelectronic circuit" as claimed in at least the Applicant's claim 1. In contrast to the Applicant's invention, the invention and teachings of Watanabe et al. are directed to the reduction of ineffective light emission of a **single** LED whereby the surface electrode and the semiconductor layer are in electrical contact with each other at ends of the highest-order branches for providing power to said **single** LED. (See Watanabe et al., Abstract). In Watanabe et al. a surface electrode embedded within the LED provides power to the single LED. There is absolutely no teaching in Watanabe et al. for supplying a power to a **plurality of devices** as claimed in at least the Applicant's claim 1.

In fact, in order for the invention of Watanabe et al. to distribute a power signal to a **plurality of devices**, a plurality of individual surface electrodes as taught in Watanabe et al. would have to be embedded in a plurality of individual LEDs. As such, the plurality of surface electrodes would not be working in conjunction with one another to distribute a power signal to the plurality of LEDs. The plurality of surface electrodes would be distributing different power signals to each of the LEDs. This is in direct contrast to the Applicant's invention of a single power distribution network for distributing a power signal to a plurality of devices as claimed in at least the Applicant's claim 1.

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Therefore, the Applicant submits that claim 1 is not anticipated by the teachings of Watanabe et al. and, as such, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

Likewise independent claim 10 recites similar relevant features as those recited in claim 1. As such, the Applicant respectfully submits that claim 10 is also not anticipated by the teachings of Watanabe et al. and also fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

Furthermore, dependent claims 2-5 and 11 depend directly from claims 1 and 10, respectively, and recite additional features therefor. As such and for at least the reasons set forth herein, the Applicant submits that none of these claims are anticipated by the teachings of Watanabe et al. Therefore the Applicant submits that all these dependent claims also fully satisfy the requirements of 35 U.S.C. § 102 and are patentable thereunder.

**B. 35 U.S.C. § 103(a)**

The Examiner rejected claims 6-9 under 35 U.S.C. § 103(a) as being unpatentable over Watanabe et al., U.S. Patent 5,309,001, in view of Olbright et al., U.S. Patent 5,266,794/Schneider et al., U.S. Patent 5,351,256/Lebby et al., U.S. Patent 5,337,397. The rejection is respectfully traversed.

**Claim 6**

Claim 6 depends directly from independent claim 1 and recites limitations thereof. The Examiner applied Watanabe et al. to claim 6 as described above for the Examiner's rejection of claim 1. The Examiner alleges that Watanabe et al. teach all of the stated limitations except for the integrated circuits are VCSELs; instead Watanabe et al. teach the integrated circuits are LEDs. The Applicant respectfully disagrees.

The Applicant does agree with the Examiner, though, that Watanabe et al. does not teach that the integrated circuits are VCSELs.

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As described above, the teachings of Watanabe et al. do not suggest or describe at least the Applicants' invention at least with regard to claim 1 for "terminal nodes coupled at the extremities of a last level for supplying said power signal to a plurality of devices that form at least a portion of said optoelectronic circuit."

Furthermore, the teachings of Olbright et al., Schneider et al., or Lebby et al., alone, do not teach, suggest, or describe the invention of the Applicant, at least with regard to claim 1. Neither Olbright et al., Schneider et al., nor Lebby et al., teach or suggest "terminal nodes coupled at the extremities of a last level for supplying said power signal to a plurality of devices that form at least a portion of said optoelectronic circuit."

The Applicant further submits that there is no suggestion or motivation to combine the teachings of Watanabe et al. and the teachings of Olbright et al., Schneider et al., or Lebby et al.

For prior art reference to be combined to render obvious a subsequent invention under 35 U.S.C. § 103, there must be something in the prior art as a whole which suggests the desirability, and thus the obviousness, of making the combination. Uniroyal v. Rudkin-Wiley, 5 U.S.P.SQ.2d 1434, 1438 (Fed. Cir. 1988). The teachings of the references can be combined only if there is some suggestion or incentive in the prior art to do so. In re Fine, 5 U.S.P.SQ.2d 1596, 1599 (Fed. Cir. 1988). Hindsight is strictly forbidden. It is impermissible to use the claims as a framework to pick and choose among individual references to recreate the claimed invention Id. at 1600; W.L. Gore Associates, Inc. v. Garlock, Inc., 220 U.S.P.Q. 303, 312 (Fed. Cir. 1983).

Moreover, the mere fact that a prior art structure could be modified to produce the claimed invention would not have made the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992); In re Gordon, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984);

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The Applicant further submits that even if there was a motivation or suggestion to combine the references (which the Applicant believes that there is none), the teachings of Olbright et al., Schneider et al., and Lebby et al., either alone or in any allowable combination, fail to bridge the substantial gap between the Applicant's invention, and the teachings of Watanabe et al.

The Examiner further alleges that it is well known in the laser art that one may use either laser source (e.g. LED or VCSEL) as a matter of obvious design choice, see Olbright et al. col. 8, lines 65-68/Schneider et al. col. 1, lines 14-16/Lebby et al. col. 3, lines 17-27. The Applicant respectfully disagrees.

The suggestion by the Examiner that the function of an LED is interchangeable with the function of a VCSEL in no way renders obvious a network for distributing a power signal wherein, "terminal nodes coupled at the extremities of a last level for supplying said power signal to a plurality of devices that form at least a portion of said optoelectronic circuit" as claimed in the Applicant's claim 1, in light of a surface electrode on the surface of a LED, wherein the surface electrode and the semiconductor layer are in electrical contact with each other at ends of the highest-order branches, as disclosed in Watanabe et al. It is true that an LED may be interchangeable with a VCSEL in some applications when using said devices as lights sources, but the powering requirements or powering methods for an LED and a VCSEL are not similar at all. As stated above, the Applicant's invention is, at least in part, directed to powering a plurality of devices, such as VCSELs, that benefit in operation when receiving a uniform bias voltage among the plurality of devices. As such, to allege that one may use either a laser source (e.g. LED or VCSEL) as a matter of obvious design choice in this capacity (i.e. powering requirements) would be an incorrect statement or analogy.

As such, and at least for the reason that neither Olbright et al., Schneider et al., nor Lebby et al., alone or in any combination with Watanabe et al., do not teach suggest, or describe the Applicants' invention with regard to claim 1, the Applicants respectfully submit that dependent claim 6 is also not rendered

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obvious by Watanabe et al. in view of Olbright et al., Schneider et al., or Lebby et al.

Therefore, the Applicant submits that claim 6 as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

#### **Claims 7-9**

The Examiner alleges that regarding claims 7-9, Watanabe et al. teach all the stated limitations except for the plurality of electrically conductive pathways being separate; instead, Watanabe et al. teach the pathways being formed of wider/broader pathways that diverge as it branches to a higher level/order. The Applicant respectfully disagrees.

Claim 7 is an independent claim that recites similar relevant features as those recited in claim 1. As described above with regard to the Examiner's rejection of claim 1, the teachings of Watanabe et al. do not teach, suggest or describe at least the Applicants' invention with regard to claim 1 for "terminal nodes coupled at the extremities of a last level for supplying said power signal to a plurality of devices that form at least a portion of said optoelectronic circuit." As independent claim 7 recites similar relevant features as those recited in claim 1, the Applicant respectfully submits that the teachings of Watanabe et al. also do not teach, suggest or describe at least the Applicants' invention with regard to claim 7.

Furthermore, the teachings of Olbright et al., Schneider et al., or Lebby et al., alone, do not teach, suggest, or describe the invention of the Applicant, at least with regard to claim 1. Neither Olbright et al., Schneider et al., nor Lebby et al., teach or suggest "terminal nodes coupled at the extremities of a last level for supplying said power signal to a plurality of devices that form at least a portion of said optoelectronic circuit."

The Applicant further submits that there is no suggestion or motivation to combine the teachings of Watanabe et al. and the teachings of Olbright et al., Schneider et al., or Lebby et al. Even if there was a motivation or suggestion to

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combine (which the Applicant believes that there is none), the teachings of Olbright et al., Schneider et al., and Lebby et al., either alone or in any allowable combination, fail to bridge the substantial gap between the Applicant's invention, and the teachings of Watanabe et al.

Therefore, the Applicant submits that claim 7 as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

Furthermore, dependent claims 8 and 9 depend directly from claim 7 and recite additional features therefor. As such and for at least the reasons set forth herein, the Applicant submits that none of these claims are obvious with respect to the teachings of Watanabe et al. Therefore the Applicant submits that all these dependent claims also fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder.

#### Applicants' Note

The Applicant's amendment to claims 1, 7 and 10 in the Response to the Examiner's previous Final Office Action dated September 24, 2002 does not raise new issues that would require a new search or consideration by the Examiner. In the above identified Response, the Applicant added the words "plurality of" in front of the word "devices" in the above mentioned claims. The amendment was not in response to prior art and was made to simply more clearly define the Applicant's invention.

Because the word "devices" was always present in the above mentioned claims, the Examiner had several opportunities to search and consider a power distribution network for distributing a power signal to "devices". Inserting the words "plurality of" does not add or take away from the scope of the claims and does not raise new issues to be considered by the Examiner. It merely more clearly signifies to one referring to the application that the Applicant's invention is directed at least in part to a power distribution network that distributes a power signal to more than one device.



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The Applicant would like to thank the Examiner for his assistance and suggestions in the furtherance of this application. As per our telephone conversation of January 23, 2003, the arguments over the prior art and reasons why the previous amendment does not raise new issues are presented in this response. As such, and in accordance with the Examiner's conclusion in the telephone conversation, the Applicant respectfully requests that the Final Office Action be withdrawn.

#### Conclusion

Thus the Applicant submits that none of the claims, presently in the application, are anticipated under the provisions of 35 U.S.C. § 102 or obvious under the provisions of 35 U.S.C. § 103. Consequently, the Applicant believes that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Jorge Tony Villabon, Esq. at (732) 530-9404 x 1131 or Eamon J. Wall, Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,



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